

LISTING OF THE CLAIMS

This listing, if entered, replaces all prior versions of the claims in the application.

1. (Currently Amended) A method, comprising:
generating a block-level write operation, wherein the block-level write operation causes a value to be written to a region of a primary volume;
identifying whether the region of the primary volume stores a first type of a plurality of types of file system metadata; and
generating information indicative of whether any of the block-level write operation should be transferred to a secondary site during replication of data in the primary volume, wherein if the region of the primary volume stores the first type of file system metadata, the information identifies that less than all of the block-level write operation should be transferred to the secondary site.
2. (Original) The method of claim 1, wherein
the block-level write operation and the information are generated by a file system.
3. (Original) The method of claim 1, wherein
the information indicates that the block-level write operation should not be transferred to the secondary site.
4. (Original) The method of claim 3, wherein
the block-level write operation modifies correctable metadata.
5. (Original) The method of claim 3, wherein
the block-level write operation modifies non-essential metadata.
6. (Currently Amended) The method of claim 1, wherein
the information indicates that less than all of the block-level write operation should be transferred to the secondary site, ~~and~~

~~the block-level write operation comprises a command, addressing information, and the value to be written to the primary volume.~~

7. (Original) The method of claim 6, wherein the information indicates that logical information associated with the block-level write operation should be transferred to the secondary site instead of transferring the value, and

the logical information identifies a source address, from which to read the value, and a length of the value.

8. (Original) The method of claim 7, further comprising: reading the value from the source address on a secondary volume comprised in the secondary site; and

writing the value to the destination address on the secondary volume.

9. (Original) The method of claim 6, wherein the block-level write operation is being performed to modify fewer than all units of metadata in a group of metadata addressed by the block-level write operation, and the information indicates that new values of only certain units of metadata in the group of metadata should be transferred to the secondary site.

10. (Original) The method of claim 9, further comprising: transferring less than all of the block-level write operation to the secondary site; and updating only the certain units of metadata on a secondary volume comprised in the secondary site.

11. (Original) The method of claim 1, further comprising receiving the block-level write operation and the information; and transferring less than all of the block-level write operation to the secondary site in response to the information.

12. (Original) A method, comprising:

receiving a block-level write operation to a primary volume and associated information, in response to the associated information, determining that less than all of the block-level write operation should be transferred to a secondary site during replication of data in the primary volume.

13. (Original) The method of claim 12, wherein the associated information indicates that none of the block-level write operation should be transferred to the secondary site.

14. (Currently Amended) The method of claim 12, wherein the associated information indicates that less than all of the block-level write operation should be transferred to the secondary site, ~~and the block-level write operation comprises a command, addressing information, and a new value of data identified by the addressing information.~~

15. (Original) The method of claim 14, wherein the associated information indicates that logical information associated with the block-level write operation should be transferred to the secondary site instead of transferring the new value of the data identified by the addressing information.

16. (Original) The method of claim 15, further comprising:
reading the new value from a source address on a secondary volume comprised in the secondary site; and
writing the new value to a destination address on the secondary volume, wherein the logical information comprises a length of the new value, the source address, and the destination address.

17. (Original) The method of claim 12, further comprising:
transferring less than all of the block-level write operation to the secondary site in response to the determining that less than all of the block-level write operation should be transferred to the secondary site.

18. (Currently Amended) A system comprising:
a processor; and
a memory coupled to the processor, wherein the memory stores program instructions executable by the processor to:
generate a block-level write operation, wherein the block-level write operation causes a value to be written to a region of a primary volume,
identify whether the region of the primary volume stores a first type of a plurality of types of file system metadata, and
generate information indicative of whether all of the block-level write operation should be transferred to a secondary site during replication of data in the primary volume, wherein if the region of the primary volume stores the first type of file system metadata, the information identifies that less than all of the block-level write operation should be transferred to the secondary site.
19. (Original) The system of claim 18, wherein
the information indicates that none of the block-level write operation should be transferred to the secondary site.
20. (Currently Amended) The system of claim 18, wherein
~~the block-level write operation comprises a command, addressing information, and the value, and~~
the information indicates that less than all of the value should be transferred to the secondary site.
21. (Original) A system comprising:
a processor; and
a memory coupled to the processor, wherein the memory stores program instructions executable by the processor to:
receive a block-level write operation to a primary volume and associated information, and

in response to the associated information, determine that less than all of the block-level write operation should be transferred to a secondary site during replication of data in the primary volume.

22. (Original) The system of claim 21, wherein the program instructions are executable by the processor to:

transfer less than all of the block-level write operation to the secondary site in response to determining that less than all of the block-level write operation should be transferred.

23. (Currently Amended) A computer readable medium comprising program instructions executable to:

generate a block-level write operation, wherein the block-level write operation causes a value to be written to a region of a primary volume,

identify whether the region of the primary volume stores a first type of a plurality of types of file system metadata, and

generate information indicative of whether all of the block-level write operation should be transferred to a secondary site during replication of data in the primary volume, wherein if the region of the primary volume stores the first type of file system metadata, the information identifies that less than all of the block-level write operation should be transferred to the secondary site.

24. (Original) The computer readable medium of claim 23, wherein the information indicates that none of the block-level write operation should be transferred to the secondary site.

25. (Currently Amended) The computer readable medium of claim 23, wherein ~~the block-level write operation comprises a command, addressing information, and the value, and~~
the information indicates that less than all of the value should be transferred to the secondary site.

26. (Original) A computer readable medium comprising program instructions executable to:

receive a block-level write operation to a primary volume and associated information,

and

in response to the associated information, determine that less than all of the block-level write operation should be transferred to a secondary site during replication of data in the primary volume.

27. (Original) The computer readable medium of claim 26, wherein the program instructions are executable to:

not transfer any of the block-level write operation to the secondary site during replication if the associated information indicates that none of the block-level write operation should be transferred.

28. (Original) The computer readable medium of claim 26, wherein the program instructions are executable to:

transfer less than all of the block-level write operation to the secondary site if the associated information indicates that less than all of the block-level write operation should be transferred.

29. (Original) The computer readable medium of claim 28, wherein the program instructions are executable to:

in response to the associated information, transfer logical information associated with the block-level write operation to the secondary site instead of transferring a new value of data being modified by the block-level write operation.

30. (Currently Amended) A system comprising:

means for generating a block-level write operation, wherein the block-level write operation causes a value to be written to a region of a primary volume,

means for identifying whether the region of the primary volume stores a first type of a plurality of types of file system metadata, and

means for generating information indicative of whether all of the block-level write operation should be transferred to a secondary site during replication of data in the primary volume, wherein if the region of the primary volume stores the first type of file system metadata, the information identifies that less than all of the block-level write operation should be transferred to the secondary site.

31. (Original) A system comprising:

means for receiving a block-level write operation to a primary volume and associated information, and

means for determining, in response to the associated information, that less than all of the block-level write operation should be transferred to a secondary site during replication of data in the primary volume.

32. (New) The method of claim 1, further comprising:

identifying whether the block-level write operation is being performed to move the value from a first region of the primary volume to a second region of the primary volume; wherein if the block-level write operation is being performed to move the value, the information identifies that less than all of the block-level write operation should be transferred to the secondary site.

33. (New) The method of claim 1, further comprising:

identifying whether the block-level write operation modifies less than all of the region of the primary volume; wherein if the block-level write operation modifies less than all of the region, the information identifies that less than all of the block-level write operation should be transferred to the secondary site.